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HARTLAND NATURE CLUB

HARTLAND VERMONT





WILLIAM EMERSON DAMON

HARTLAND NATURE CLUB

HARTLAND VERMONT

By

Mrs EVALINE (DARLING) MORGAN



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Sgt-
Harold G. Rugg
J. 19, 1924



After long experience I am convinced that the best place to study nature is at one's own home—on the farm, in the mountains, on the plains, by the sea—no matter where that may be. The seasons bring to his door the great revolving cycle of wild life, floral and faunal, and he need miss no part of the show.

John Burroughs

CORRIGENDA.

Page 10, transpose lines 1 and 2.

Page 83, four lines from bottom, *for* “tone” *read* “love”.

Page 85, six lines from bottom, *for* “concepting” *read* “conception”.

Page 86, line 1, after “from” *read* “what”, and omit comma.

Page 86, five lines from bottom, *for* “fields” *read* “field”.

Page 86, four lines from bottom, *for* “power” *read* “honour”.

The Origins of Order and Law.

FOREWORD

The publication of this extremely interesting pamphlet may well be made very valuable as an inspiration to nature lovers in many places to do likewise. While not every village in America has so large a group of observant people with time, energy, knowledge, and civic spirit sufficient for the conduct of a club like this, and with outside affiliations among people of knowledge and means able to help in the work, yet there must be many places where these conditions are approximated. So the distribution of this publication ought to stimulate emulation.

The simplicity of the style gives the tale charm. And the unpretentiousness of the club's conduct makes the adventure attractive. One reflects, "Here is a group of people which grows but does not climb." They have lived and worked for fifteen years without declaring themselves a national movement, and hence without endeavoring to organize everybody on the continent under their leafy banner. They remind one of Henry Ward Beecher's story, "The Mother Bird too Wanted to Sing, but she had no Time, so she turned her Song into Work."

Consider, ye that live in a middle state suburb, are there three or four persons in your town who have sufficient real love for real Nature to gather together in her name? Could you draw into communion fifteen men and twenty-five women, and just go along holding informal meetings and paying fifty cents per annum dues, and be happy in showing each other bugs, and birds, mosses and ferns, constellations and tree leaves, until finally it became necessary to establish headquarters at a rent of ten dollars a year? Could you easily and gracefully fall into co-operations with your local schools, your state colleges, the national government, distinguished summer boarders, and exiled sons of your own town, all of whom would willingly contribute to your work? And do the native sons and daughters of your village when they prosper in distant places remember the old home and endow cozy headquarters for your little club when they put up a new Town Hall? These things belong to the spirit of New England. And the country in which these things happen has culture.

Whose children, think you, are likely to grow up with the truest culture of this sort—the children of the Metropolitan rich, who are

taken on nature study jaunts by itinerant teachers, selected and paid for the purpose, or the children of the Metropolitan poor, who when a self-immolating teacher takes them on an annual jaunt to a park and invites her own mother to come and help, gaze upon the mother and the park and inquire as to the former, "Is that Mother Nature?" or the children of these village families who go in the parental Ford, or behind the family team, the whole family together, on a picnic club meeting, to explore "Garvin Hill" or the "Acre" and make mutual report on its flora, its fauna and its cultural improvements? Think of the families all talking it over thereafter! No wonder that successful progeny return in old age to endow something! They feel toward their field and forest haunts the tenderness of the genuine patriot who desires in his turn to repay the blessings he has received.

So—the publication of this brochure is a duty to humanity, to the country, to the State of Vermont, and to the town of Hartland.

J. C. DANA

HARTLAND NATURE CLUB

HOW IT BEGAN

On a day in October, over fifteen years ago, in a little white farm house far up among Vermont's green hills, four friends stood in front of a curio cupboard while the owner showed and described her treasured possessions.

"This is a great horn spoon, and this a flowered luster pitcher, and this a quaint old wood carving. They all came to me from my Scotch ancestors. These are king and queen conch shells from the West Indies, and this is a whale's tooth from Cape Cod. They were given me by an old sea captain."

The tooth was passed around to test its surprising weight.

"Look at this bit of clapboard from one of the original Pilgrim houses of Plymouth, Massachusetts. This fragment of brick is from the first fort there. Here is a bit of gold from our own mines near Plymouth, and this is silver ore that my sister and I got at Silver Plume, Colorado."

"What," exclaimed one, "can that be on the top shelf—that plume-like plum colored thing of such graceful shape?"

"Oh, that was given me by Mrs. Alfred Bell when I taught school in the Densmore District. I was only sixteen years old at that time, and she started me on the collection of curios by giving me all these marine specimens. I have had a curio cupboard ever since."

As they looked and wondered an idea seemed to strike all in the group at once. And in one breath the four exclaimed, "Let's have a Nature Club in Hartland!"

They talked it over as they examined the rest of the collection. There were specimens of plants from North Carolina and from Colorado, and from England, each full of reminiscence for the collector. Then they went out into the garden, beautiful with autumn's flowers and fruit, and looked away to the far hills, ablaze with color. When they parted, their thought had become a purpose: "We will organize that club."

IT IS ORGANIZED

On November 16, 1907 the Hartland Nature Club was organized. The secretary's record says:

A meeting of those interested in the study of Nature called this day at the residence of the writer, brought out an attendance of four. It was decided to organize a Nature Club in Hartland, and a constitution was drawn up and adopted.

It was decided to hold a meeting once a month on a Saturday afternoon for reading of papers and discussions, to take walks for observation on Saturday afternoons two weeks after each indoor meeting, and to circulate this book for signatures between this date and the December meeting.

Jay G. Underwood, Secretary.

The constitution stated the objects to be to promote "friendly intercourse among students of nature," and to secure "knowledge of the natural history of Hartland," and the dues were fixed at 25 cents a year, and afterwards raised to 50 cents!

There were 43 founding members, 28 women and 15 men.

ITS FIRST YEAR

The work done at indoor meetings during the first year consisted of reading of articles; the reading of papers, some written by one member and some collective papers, written by the co-operations of several, one of whom acted as editor; talks by members or by visiting specialists; discussions and queries, and exhibits. The subjects considered during the first year were as varied as the nature interests and opportunities of the members. They covered many topics which are given elsewhere in the First Program, 1907-08.

The meetings were held in the homes of members. Many members live on farms, somewhat remote. As soon, therefore, as the weather permitted, the club held at these farms all-day meetings. This developed into a very successful policy of field meetings for exploration of various sections of the town. After the home farms had been explored, expeditions were formed for specific study of hills, swamps, meadows, and streams. Not the least delight of these early meetings came on the social side from the getting acquainted with people in the various parts of the town, and the enjoyment of their interest and co-operation.

It will be seen that 28 papers and talks had been given, by 14 people, several of them accompanied by exhibits, and that three of the papers were collective. This indicates a goodly percentage of active members, a pretty well equalized degree of activity, and a reasonable amount of genuinely objective work. For a literary or musical club this record would not be remarkable; for a nature club it was certainly phenomenal.

IT GETS A TRANSIENT HOME

Fifteen months after the club started it united with the Village Library Association and the Y. M. C. A., in furnishing and maintaining "Village Rooms" in an old building which had once been a hotel—the Hotel Hartland.

The rent was divided among the three organizations, the nature club's portion being ten dollars a year! The rooms, which had been occupied by a tinsmith, were renovated, with great enthusiasm. Members and friends contributed materials and work, money and furniture. Two dollars were spent for a show case and table, and chairs were bought; to a wainscot rail was added a shelf for drawings and collections. Decorations were in green and white with green curtains and hangings of burlap. Mr. Underwood gave a bookcase, and the library came into being.

Four months after the founding of this library a librarian was elected, and now she administers 60 volumes and many bulletins, magazines and reports—not to speak of the original papers in the Club's archives.

Yet is literary expression, and still more literary impression, but a by-product of the Club's business. With the founding of the library came the beginning of the herbarium. For this work uniform mounting paper was purchased of the Cambridge Botanical Supply Co., and paid for out of the general fund. Some members discovered, some collected, some mounted specimens at home with strips of gummed paper, and some came together for all-day work meetings. Where is the pen to chronicle even one of these meetings?

IT GIVES A BANQUET

In Hotel Hartland was a dance hall with a spring floor, and here the club's first banquet was held. Forty-four members and guests were present. The hall was decorated with evergreens

and holly and many specimens of the work of members were exhibited on the walls. These included:

A collection of birds painted in water color by Mrs. Morgan;

Ferns collected by Mr. Rugg;

Pressed flowers, including some not hitherto known as from Vermont, collected by the club;

Mosses, presented to the club by Miss Darling;

Tree leaves, shown by Miss Hattie M. Smith;

Mounted butterflies shown by Mr. Phineas W. Whiting;

Minerals of Hartland, shown by Mr. B. P. Ruggles.

Grasses and sedges.

Letters were read from Ernest Harold Baynes and from President Ezra Brainerd, of the Vermont Botanical Club.

The sub-editors of various special subjects reported on their specialties: astronomy, insects, plants, geology. 105 different birds were reported, several of which were new to the locality. A special study had been made of a worm that had been at work in local sugar places. Thirty plants new to town lists had been found, and several had been added to the flora of the state.

Short encouraging and stimulating addresses were made by Rev. Charles Echterbecker of Windsor, Mr. Phineas W. Whiting of Dartmouth College, Rev. O. D. Clapp of the local Methodist church, Rev. C. O. Gill of the Congregational church, and Mr. A. J. Hoisington of the Hartland Grange.

IT ATTAINS SELF-CONSCIOUSNESS

At the second banquet, a year later, the club reported having taken its second step; it had begun to influence the town educationally, thru the children. At an Arbor Day celebration competitive essays about trees were written by children for prizes, and competitive work was done in collecting and classifying tree buds and tree bark. The adult population had also been educated by public illustrated lectures, notably one on ferns, one on the herring-gull and one, in connection with the Y. M. C. A., by Edward Avis on bird songs.

The Rev. F. K. Brown, pastor of the Congregational church, at this point burlesqued the public doings of the Club in the Congregationalist, thus adding to its prestige. He hit cleverly at various outstanding features and described among others a much bespectacled male member who had on exhibition over

one hundred specimens of grasses and sedges, and who showed a paternal interest in everybody and everything.

Thus at the end of its second year the Club became conscious of its own beginnings, and the world outside of Hartland became conscious of the Club.

ITS ANCESTORS

The club has been, as is every organism, the product of its ancestors and its environment.

Like water which seeps through the soil after a rain to bubble forth at another level as a spring, love for nature and interests in natural phenomena had permeated the hearts and minds of Vermonters as an inheritance from their ancestors and fore-runners.

It was encouraged by the little red schoolhouse and by the old academies which stamped upon the people of Vermont a scholarly impression. Says Cady, "Bucolic yet academic are Vermont villages - - - with entire streets of homes in every one of which dwells some person familiar with Virgil and on friendly terms with Horace" - -

There, for instance, was the Green Mountain Liberal Institute, later the Green Mountain Perkins Academy, at South Woodstock. It did much to stimulate interest along scientific lines by the fine training it gave under the leadership of wise and sympathetic men, notably Dr. J. S. Lee, its principal during the Civil War period.

Students from this institution became teachers of our rural schools; and private schools were often taught by them for a few weeks in the winter. They aroused here and there an interest in astronomy, geology, or zoology. The occasion of their thus teaching was their poverty—a poverty that became to us riches. High ideals and the spirit of learning was the rule among them. So when in due course the Nature Club took shape, there was good soil for its growth.

There are lively traditions of a uniquely humorous farmer named Luther Damon, who had a fine farm near the Windsor line, and who was noted for "sayings". He had a son named William, and a daughter named Elizabeth. It is recorded that he took William on a trip to Boston, and that the boy saw there Aquarial Hall. Whether Elizabeth went along is apparently not known. But the two young Damons became pioneers in

aquarium studies in America. Elizabeth was one of the first persons in the United States to maintain a fresh water aquarium, and William, who thru his vocation was identified, as part owner and as credit man, with the Tiffany jewelry house of New York, made a career thru his avocation also, as a naturalist. Barnum, in 1863, acquired the Boston Aquarial Gardens. A fishing smack was chartered, William Damon was placed in charge, Albert S. Bickmore was appointed collector, and they got over 600 fine specimens. The trip led to the publication of Damon's book, "Ocean Wonders", to the popularity of Bermuda as a resort for Americans, to the later career of Bickmore for a quarter of a century as Curator of Education in the Natural History Museum of New York, to the establishment of the New York City Aquarium, now at Battery Park, and to the building of the present comfortable quarters of the Hartland Nature Club, as shall herein after be related.

The club member, already mentioned as facetiously described by Dr. Brown in the *Congregationalist*, was Byron P. Ruggles, a self-taught natural history student to whom the formation of the club probably meant more than to any one other person. He had in earlier days shared his lore and interests with two other men of genius, Mr. W. F. English, the veteran inventor, and Mr. E. M. Goodwin, a teacher and collector. These three took "days off" together from farm or shop; they collected and exchanged specimens of minerals, shells, plants, birds' eggs and insects, and thus touched hands with far lands.

Some members of the club had delightful memories of occasions when they had the privilege of seeing these collections. Who can measure the subtle influence of such opportunities?

The club was a wonderful outlet to Mr. Ruggles. All recall with pleasure the joy that shone from his face when he pulled from a well-filled pocket one of his "short papers that would take only a very few minutes to read." It always proved to be full of rare humor.

His paper on Snail Swamp is one of the club's choicest possessions. My pleasantest recollection of him is of his conducting us through this swamp and the beautiful adjoining woodland. He knew every step of the way. From a life-time's association, inanimate things were to him animate. He knew and addressed trees, flowers and shrubs as if they understood him. He pointed here, to where a giant pine had fallen, revealing its age by its annular rings; there, to where some rare

fresh-water snail shell had been discovered; and again, stooping down, he explained the formation of the swamp, and dug into the marl to show its whiteness and its depth. On the return trip he took us past his fern, known to the world of botanists thru him, and we received from his hands choice fronds from it, given as if the delights of nature were thereby made forever permanent to us. At such moments he showed the hidden springs of his joy in life.

Another man of far reaching influence was the efficient town physician, Dr. D. F. Rugg. He was for several years Superintendent of Schools also, and during his official visits to classes he was able to transmit to appreciative students something of his own rare gift of observing the unusual in both nature and literature. His son, Harold Goddard Rugg, possesses many of his father's characteristics, and is a valuable club member.

ITS ENVIRONMENT

Yet, though there had been none of these leaders the Hartland Nature Club must have been. For few regions have greater gifts of beauty and diversity than are found in the thirty square miles which make the town of Hartland. And as for the state—

“They ain’t too green, they ain’t too gray,
They ain’t too high or dry or small;
They’re awful pretty in the Spring,
But prettier in the fiery fall;
And they’re so smooth that you can farm
Clear up to snow line if you want,
Which isn’t true of any hills
In any place except Vermont.”

And the varied features of the town, from its highest point, Garvin Hill, over 1,800 feet high, to the terraced plains of the Connecticut River, have been explored and partially charted by the Nature Club.

Some of the features studied are:

Water:

Sumner’s Falls—Connecticut River

Ottauquechee Falls—North Hartland

Ottauquechee River and branches
 Lull Brook and branches
 Glacial ponds
 Artificial ponds

Swamps:

Hart Island	Weed swamp
Steele swamp	Lamb bog
Spruce swamp	Eshqua bog
Webster swamp	Bashan bog

Hills:

Garvin	Scott
Barron	Hall
Webster	Hendrick
Cornhill	Mt. Hunger
Bates	Sunset Ridge
Davis	Morrison Heights

Mt. Ascutney, visible from almost every point in town, is our most inspiring height, and Admiral Folger says it is next to Fujiyama, the most beautiful peak in the world.

Lowlands and Intermediates:

"The Plain"	Terraces
Bluffs	Foothills

Ravines and Glens:

Jenneville	Mill Gorge
Martinsville	Depot
Nathan Harlow	Finley

Ledges:

Hemenway	Labaree
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The varied character of the physical features of the region, indicated by their mere names, produces a flora and fauna of rare diversity and of great interest, as programs and collections show.

CO-OPERATIONS AND BENEFACTIONS

From the beginning the club has received co-operation and aid from many sources.

The most notable of its gifts is that of a home. Until



DAMON HALL

April, 1914, the Village Rooms were occupied, but soon after this date the building, then about 125 years old, was taken down to give place to a new Town Hall. This was called Damon Hall. It was built as a memorial to Luther and Betsey Thayer Damon and their children, especially Willam Emerson Damon, whose influence in other scientific ventures of world-wide importance has been told.

After the original plan of Damon Hall was completed, two more rooms, to serve as permanent quarters for the Nature Club and the Historical Society, were added. Mrs. W. E. Damon and Miss Lizzie E. Lamb were especially interested in this project, though the gift was from all the heirs, including the children of Urias and Harriet Cotton Damon, the children of John and Lucy Damon Lamb, and the children of Merritt and Lavinia Damon Penniman.

These two added rooms are at the rear of the main building behind the stage and over the kitchen, with a separate entrance and a separate furnace. They are so divided by an archway that they are really one room, 40 by 18 feet.

The club has received aid in many other ways also, notably from the Vermont State Botanical and Bird Club, the University of Vermont, the Northeastern Federation of Scientific Clubs, and the Meriden Bird Club.

Miss Elizabeth Billings of Woodstock and New York secured for several summers Professor A. P. Morse of Wellesley College to conduct natural history classes in Woodstock, for both young people and adults. His attendance at several of the Nature Club meetings gave a great impetus to our work. Miss Billings herself is an active club member and has shared with the club her fine collections.

Others among the many who have helped us are:

Mr. Ernest Harold Baynes by lectures and letters; Superintendent E. L. Ingalls, by co-operations of the schools, especially in Arbor Day observances; Mr. Charles Sheldon, by lectures; Mrs. H. P. Starkweather, of Florida, by specimens of Florida ferns, plants, and seeds; Mrs. A. T. Hurd of Huntington, Long Island, by gifts of money and mounted specimens; Mrs. M. C. S. Symonds of the same place, by gifts of books, photographs, specimens, and paintings; Mr. Karl A. Pember of Woodstock, by talks and photographs (Mr. Pember probably has the finest series of Duck Hawks' eggs and photographs of the birds in existence); Mr. Richard Marble of Woodstock, by talks on

scientific forestry and by naming and classifying birds; Mrs. Mary W. Moore of Woodstock, by clever imitation of bird notes; Miss Elsie M. Kittredge, of New York Botanic Gardens, by talks, photographs and collections; Dr. Edward Williams, jr. of Woodstock, former professor of geology at Lehigh University, by talks and gifts; Mr. John Cotton Dana, summer resident of Woodstock, Librarian of the Public Library and Director of the Museum of Newark, New Jersey, who provides the opportunity of publishing this report.

Scientists, lecturers, college professors, teachers, farmers and special students have spoken before the club:

Dr. Ezra Brainerd, President of the State Botanical Club; Mr. J. H. Emerton of the New England Federation of Scientific Clubs; Mr. E. H. Baynes, President of the Meriden Bird Club; Dr. Frederick S. Lee, of Columbia University; Mr. Harold Bailey, Assistant Secretary of Agriculture; State Forester Hawes of Burlington; Mr. Charles Sheldon of the U. S. Biological Survey; Mr. G. Whittier Fuller, reptile expert; Mrs. Chase of Lyndonville, school gardens expert; Professor Griggs, of Dartmouth, a successful photographer of birds; Rev. C. O. Gill, showing lantern slides from the work of W. A. Bentley, Jericho Center, "the one man in the world who has made a success of photographing snow-flakes"; Mr. Byron P. Ruggles, on many subjects, from butter making to the number of quail referred to in Numbers xi., 31 and 33. "And the people stood up all that day, and they gathered the quails; he that gathered least gathered ten homers."

Association with other clubs of like interests has proven helpful. A meeting was held with the State Botanical and Bird Club, with social events, field meetings, and lectures; a program was presented before the Woman's Club of Windsor; the Meriden Bird Club entertained us at the home of Winston Churchill in Cornish; a class of young girls from Windsor, under the name of "Mother Nature Studies", joined us, bringing new life and interest to our work.

DEVELOPMENT OF METHODS

After the club was formed it was found that many people had been interested for years in some branch of nature study and were ready to come forward with contributions on a wide range of subjects. Thereupon a method of work was established

that had as its keynote originality. It soon became evident that, to make our work comprehensive, we should establish departments, each under the leadership of Editor and sub-editors, for the study of Astronomy, Animals, Birds, Insects, Plants, Minerals, Microscopy, and that we should put out a yearly bulletin to record observations in these departments.

The desire of the club to share its work with others led to the yearly banquet, at which members and friends not only prepared and provided the food, decorated the hall and put up the exhibits, but also gave outsiders the opportunity, under attractive conditions, to hear speakers and the reading of the bulletin.

The custom of holding banquets continued until 1915. It was then thought best to hold the annual meeting in August when weather conditions and many summer friends combined for its success, with a picnic dinner, a roll-call to which each member responded with a fitting observation, and an exhibit with a special speaker when possible.

As the years went on the club spent more time in the open and felt the importance of knowing thoroughly the natural history of specific places and of studying one phase of a subject. For example, it studied, in 1921, "Bogs, with ecological observations". This type of work is broader and in some ways better than our former more casual method. It was adopted partly because members had, under war conditions, less leisure to do original work and to write papers. The war suspended the Club's work entirely for one year and interfered with it seriously for three. Our experience has emphasized the fact that "country leisure" which includes long winter evenings with good books, plenty of specimens collected throughout the year, walks and talks with congenial friends and absence of pressing financial matters, are important factors in the success of a nature club.

It has also been shown that a few good students, who look upon their investigations as a component part of a life-time's work, are necessary to hold an organization of this kind together.

The assignment of definite subjects for study has produced good results. Individuals have been given subjects such as plant families—ferns, grasses, orchids, violets, etc.; bird families—sparrows, warblers, etc.; how to recognize common moths and butterflies; injurious insects, etc. In studying the last subject we had the help of Phineas P. Whiting, who bred flies, wasps, and animals to prove certain laws of genetics. Special interests of members are, of course, consulted. For instance,

the work in microscopy has been mainly observation of fresh water algae, by Mrs. Lucia Hazen Webster.

This custom of definite treatment of special topics has led to some permanent contributions to the natural history of both town and state.

Some of the subjects follow:

- Land and Water Shells of Hartland—B. P. Ruggles
- Windsor County Game, with collective paper on Hunting Tales—J. P. Webster
- Rare Local Birds—Mrs. Pearl E. Underwood
- The Flora of Seven Upland Ponds—Miss Nancy Darling
- Algae—Life in a Drop of Water—Mrs. Lucia H. Webster
- Dye Plants of Hartland—Mrs. Helen H. Durphey
- Berries of Hartland, edible and poisonous—Mrs. Della D. Merritt
- Recipes using Wild Fruits—Miss Laura Nelson
- Snow-shoes and Nature—Lee H. Graham
- Tracks and Trails and Nature Study in Winter, with photographs—Mrs. E. D. Morgan
- Baskets, with exhibit of examples—Mrs. Winifred Spear
- Children's Gardens—Miss Dora T. Penniman
- The Flora and Fauna of Hart Island—J. G. Underwood
- Camera Studies—Miss Hattie M. Smith
- What is Ecology?—Miss Elizabeth Billings
- The Photographing of Flowers, with illustrations—Miss Elsie M. Kittredge
- The Ferns of Hartland, with exhibit—H. G. Rugg
- The Winter Birds—Mrs. Mary B. Gates
- Native Trees, Shrubs and Flowers suitable for landscape gardening—Miss Emeline Webster
- Uses of our Trees: For Fuel and Timber—Miss May E. Rogers; For Food—Miss Marion Webster
- Bird Music—Miss Florence H. Sturtevant
- Shrubs that I Know—Miss Nina Martin
- Wasps—Mrs. Anna B. Spalding
- Some Rodents in Hartland—D. C. Webster

SOME CUSTOMS

The celebration of Arbor Day has been mentioned. Besides the holding of co-operative exercises and the giving of prizes for essays and collections by pupils, tree and shrub planting, grading and beautifying of school grounds have been encouraged. Ways for individual schools to celebrate the day have been suggested and an Arbor Day program, obtained through the courtesy of Mr. W. E. Ranger, Commissioner of Education for Rhode Island, has been distributed.

The custom among Club members of feeding birds in winter has been so general as to cause their example to be followed by many others. Some have built feed stations and some simply hang out a basket in which seeds and suet are placed. One woman conceived the idea of heating a large freestone in the coldest weather and placing food upon it where her little bird friends could be warmed as well as fed! In time of heavy spring snows many scatter chaff for seed-eating birds, or put out chopped suet, hard boiled eggs, bread crumbs soaked in milk, or boiled salt pork for birds like robins and blue birds.

Pamphlets have been distributed on the protection of native plants; and when walks have been conducted by the Club, the policy has been not to collect specimens by pulling them up by the root. One member saves all bird specimens that have been found dead or injured and makes bird skins of them.

A teacher of experience took charge of school gardens during the war. An exhibition from them was conducted by the Club, ribbons being awarded for vegetables, flowers, canned goods, sewing, embroideries, knitting and drawings. One of the most successful of these occasions was on "Old Home Day" when we had a large attendance.

TYPICAL MEETINGS

It may truthfully be said that there was never yet a dull meeting of the Club, whether there were two or fifty present.

The places of meeting have been greatly varied: the sun parlor of the Underwoods, the bright garden at the Darling homestead, Fairview with its summer visitors and its lovely outlook, Quechee Gulf, Catamount Ledge, Hart Island—each of these names calls up a picture of past delights.

In accepting the invitation of Charles Sheldon of Woodstock on July 14, 1916, to come to his summer home for luncheon

and an illustrated lecture, the Nature Club gained a rare treat. The social hour was spent on the beautiful veranda, and then the guests were invited into a room where stereopticon views were shown. The slides were made from Mr. Sheldon's own photographs taken at Mt. McKinley, Alaska, and on his expedition through parts of Colorado and New Mexico. He studied the life and habits of animals found in those regions, principally the Alaskan grizzly bear and the mountain sheep. Some of his experiences were unique and thrilling. Mr. Sheldon's quest is always that of the naturalist, and his researches are original and aggressive.

At the joint meeting of the Vermont Bird Club and the Nature Club, September 13, 1913:

Miss Elizabeth Billings entertained the two clubs at her home, "The Hill", lunch being served on the tennis court, and the afternoon session held in the music room where were exhibited a comprehensive collection of insects taken in Woodstock, of grasses, and an artistic display of mushrooms modeled in plaster.

At the close of the meeting the members visited Miss Billings' fernery. A delightful walk to the golf house where we saw an interesting collection of mounted birds, closed the day.

September 4, 1915:

The Cream Pot, so called, is on the J. S. Darling farm, a short distance from the Wallace Rodgers place. In former days two houses at least stood in this beautiful basin. Through it a trout stream flows, fed by springs from surrounding hills. Tradition has it that formerly a Mr. Doton lived there with eight lovely daughters.

A winding road leads to a spot where the house probably stood, and where the remains of a barn cellar can still be seen. To this region migrating birds flock in large numbers, and warblers, sparrows, thrushes, young indigo birds, flickers and hawks have there been seen. Mrs. C. C. Spalding read an instructive paper on Wasps, contributed to by Mrs. Janet D. Eaton, Mrs. Evaline S. Rogers, Miss Emeline Webster and Miss Gladys Bagley. Mrs. Evaline D. Morgan's paper on Spiders was fully illustrated by specimens mounted in alcohol, by live spiders and by drawings and photographs. Members were invited to observe specimens under the microscope, and this added much interest to the subject.

August 10, 1912:

It is gratifying to chronicle the success of the Club's August picnic at Sumner's Falls. Thirty-six adults, mostly members, and sixteen children enjoyed the natural beauties of this interesting place. Fishing, botanizing, insect hunting, and the picnic dinner gave pleasure to the members and their young guests. The Club was especially glad to welcome Professor Morse of Wellesley, an honorary member, and to have him address the meeting. Two interesting papers—The Catbird and the Thrasher, and The Message of the Birds, were given by Mrs. Durphey and Miss Sturtevant. Mrs. Lucia Webster gave an amusing account of the effort of a catbird to learn the thrasher's song. For the benefit of the children Miss Darling showed and described many interesting specimens and Mrs. Morgan exhibited some of her bird skins.

December 11, 1915:

The Nature Club met for the first time in the beautiful new rooms in Damon Hall. It was voted that the Secretary send letters of thanks to Miss Lizzie Lamb and to Mrs. W. E. Damon, to whom this home for the club is due; to Mrs. W. F. Gile for specimens of native woods collected and labelled by her husband; and to Mr. B. P. Ruggles for several of his collections given to the Club.

The question of furnishing the rooms was discussed, and arrangements made for purchasing some of the things needed. The papers of the day were Camera Studies, by Miss Hattie M. Smith and Scientific Discoveries, by Mr. Ruggles.

From Vermont Botanical and Bird Club Bulletin, 1919:

"Four Summer Meetings of the Hartland Nature Club: The first was held in June at 'The Highlands,' when the Woodstock Bird Club was a guest of the Nature Club. Karl A. Pember showed and described a large collection of birds' eggs, started 25 years ago. His talk, partly reminiscent, was highly entertaining as well as instructive. Mrs. Mary Moore imitated bird notes as different birds were mentioned and eggs shown.

"Harold Rugg gave an illustrated talk on The Hardy Fern Border, the specimens of English varieties of the lady-fern being especially interesting.

"An expert, Mr. George Barrus, in charge of blister rust control in New England, explained the pine tree blight, advising

that all currant and gooseberry bushes in the vicinity of pine plantations be destroyed.

"In July many nature lovers gathered in the garden at Miss Darling's home where she gave a delightful talk on a collection of Alpine plants that Rev. S. G. Spear collected in Switzerland, as he and a friend tramped through the mountains.

"By means of an illustrated work on Alpine plants presented to the Club by Mrs. Symonds of Huntington, L. I., she was able to classify all the species, numbering about 80, into 33 families.

"Several guests who had traveled in England and Switzerland gave personal observations that added much to the occasion."

The Club's annual meeting in August, 1916, which now takes the form of a picnic and roll-call, was held in Hartland village on the lawn of the Steele estate.

"Miss Sturtevant read an interesting and comprehensive report of the year's work, and letters were read from absent members.

"Miss Kittredge, collecting for Miss Billings, showed several plant specimens, rare in Vermont.

"At roll-call each member responded with some observation of interest. J. G. Underwood, fresh from a trip with Mr. Winslow and Mr. Rugg for additional stations for *Aspidium Filix-mas*, reported that this fern seems to grow in the vicinity of butternut trees and at a high elevation.

"The picnic table was decorated in patriotic colors.

"The September and October meetings, in 1918 were combined and by invitation met with Mrs. Mary W. Moore of Woodstock.

"Mrs. Evaline D. Morgan read a paper on Definite Ecological Studies which gave a careful exposition of the plants, animals and insects with their inter-relations as observed at 'The Highlands' for the past nine years. It was fully illustrated by fresh and mounted specimens, and conveyed a clear idea of what is meant by the word ecology.

"Mrs. W. E. Mack, who has a large herb garden, made her paper on Garden Herbs, Their Culture and Use, highly instructive on account of actual experience, and a basket heaped high with bunches of fragrant herbs brought out many exclamations of wonder and pleasure.

"Contributions by members included Mithridates paste, a compound of rue, juniper berries, figs and walnuts; rose conserve; rose drops, and articles flavored with mint. These gave spice to the meeting, which was one of the most delightful ever held."

On July 16, 1921, the Club held its annual meeting at North Hartland, where observations were made above and below the Falls, where the Ottauquechee nears the Connecticut. Above, the quiet stream is bordered by green meadows, inlets, shady tangles, fine trees. Here, the little green and night heron, the kingfisher and spotted sandpiper, the red-winged blackbird and olive-sided fly-catcher find a home. In the water float three species of pond-weed, one as feathery as a sea-weed; while along the stream grow tall iris, arrowhead, St. John's wort, closed gentian, wild forget-me-not, the lovely *Habenaria fimbriata* as well as the more common purple fringed, orchis-*psychodes*, dainty lobelia, yellow loosestrife, false pimpernel, skull-cap, monkey flower, and an uncommon purple-flowered potentilla. Near at hand in the mossy meadow among beds of yellow myrtle and pennywort, was found a new station for one of the rare fern allies—*selaginella apus*.

In places the shores are bordered by rocky cliffs, the most picturesque of which forms the falls by the Ottauquechee Woolen Mills. Below, the stream divides to make a peninsula and sandy flats, where vegetation shows decided contrasts to that above the falls.

Near the water's edge, and sometimes growing entirely procumbent, the spreading dogbane flourishes; nearby are tangles of Joe-Pye and jewel weed, tall aster and giant golden rod, purple and white vervain, and a rare hybrid of the two, nettles, showy grasses, and willows covered with wild grape and woodbine.

On the peninsula, the center of which is completely matted with horsetail, grow elms, silver and ash-leaved maples, ground nut and wild peanut, pale-leaved smartweed, a striking hedge-nettle known as wound wort, and, loveliest of all, great masses of the swamp milkweed, upon which were feeding swarms of the golden wasp, black hornet, bumble bee, milkweed beetle, silver-spot butterfly and the showy *lycomorpha* moth in black and yellow.

By the banks of the Connecticut, near the confluence of the two rivers, were found the dainty flowered buttercup *ranunculus Flammula*, var. *reptans*, an interesting spurge, several sedges and bright patches of tick trefoil.

The day was perfect. Cool breezes and bright sunshine added charm to this varied region which yielded to its explorers a list of 55 plants, 12 mosses, 18 birds, 12 insects.

June 24, 1923:

"The Gravel Pit" is a well-known landmark at the approach of Hartland village, and here the Club assembled to hear a fascinating bit of earth's story read by Dr. Edward Williams, jr., from the various strata of pebbles that this partially excavated pit reveals so strikingly. Gravel of varying degrees of coarseness and fineness with corresponding variation in pitch show, as Dr. Williams explained, that these deposits were brought by tremendous river currents of differing speed. That many pebbles came from a distance was shown by those of granite from Bethel and hornblend schist from Hanover, N. H. Others showed examples of weathering indicating sudden changes in temperature, gash veins where potash had dissolved quartz, cementing of fine stones on larger ones by carbonate of lime, stones showing rotted garnets, mica in a great variety of coloring, and an endless variety showing spheroidal weathering, progress in weathering and iron staining.

In the afternoon the meeting was adjourned to the Club room where each one had an opportunity to have identified the specimens collected in their individual localities. Then at the close, as a happy surprise, Dr. Williams presented the Club with a beautiful collection of minerals and added to its value by explaining each specimen as it was unwrapped. A most enthusiastic vote of thanks was extended to Dr. Williams for making this meeting so uniquely valuable and interesting.

May 19, 1923:

The rallying point for this meeting was the Bates schoolhouse where Miss Mary Blood, teacher, and several of her pupils welcomed the members and friends of the Club in their attractive schoolroom, and shortly after acted as guides on a walk which first led to a sphagnum meadow through which a clear brook, bordered thickly with marsh marigolds, wound in and out under great willows, and making a never-to-be-forgotten picture in the bright May sunshine. Nearby on a dry hillside were countless beds of checkerberry, heavily fruited, where all paused to feast, and to listen to the rare note of the solitary vireo. Five kinds of violets, many of them in great masses, studded the pastures, warblers were numerous and tame, and were observed at close range. On the homeward way a pond fed by living springs and tucked away under a protecting hill was

visited, and the unusual and delightful discovery of four solitary sandpipers was made. The possibility that these rare birds might linger at this point to nest was still more alluring. Among the birds that were evidently doing so were the kingbird, red-winged blackbird, song and swamp sparrows, and the Maryland yellow-throat. A beautiful maple grove just off the Quechee road was chosen for the afternoon meeting, and here, seated on mossy knolls, the Club was highly instructed and entertained by an illustrated paper on Spiders' Homes by Mrs. Pearl E. Underwood. An unusual number of interesting reports of spring birds were given; Dora and Lucia Webster reported destroying 100 nests of the tent caterpillar; Mrs. Morgan read a delightful paper written by Mr. A. D. Cotton on "What branch of Nature Study do I like best?"; a new member, Mrs. Deane McArthur, was voted in; and after a leisurely walk back to the schoolhouse, good-byes were said and new routes were chosen leading home from the Bates neighborhood.

SOME VALUABLE PRODUCTS

From meetings of the character of those just described have arisen certain permanent results, among which may be named:

A check list of Herbarium specimens

The Orchids of Hartland

The Ferns of Hartland

Ecological Studies of Bogs and Swamps

Seasonal Bird Chart

Bird Skins and Bird Paintings

Garden of Wild Vermont Plants

Flora and Fauna of Snail Swamp

Flora of Hart Island

List of Hartland Animals

Bird Music

Collections and Books

In writing of the work done by two of the Club's most helpful members, Mr. Ruggles and Mrs. Hurd, I said, "It is the highest function of a nature club to discover real students and to turn to service and inspiration the knowledge and material

collected by them that might otherwise be lost." And I might add that such an organization stands for the development of an idealism whose value cannot be formulated.

This Club has always been simply conducted. Anyone interested in nature can join by paying 50 cents a year. When special needs have arisen, money has been given or subscribed to meet extra expenses.

What the policy of the future shall be must be determined with each passing year. There is no doubt that its collected material offers an interesting field of usefulness, and the best that it has accomplished is to have awakened the spirit of inquiry along the lines of natural history to such an extent that never a month passes that some interesting query, specimen or contribution is not sent to the Club for its answer, identification or acceptance. During its fifteen years of existence, it has had in all a membership of 117, numbering today 40 active members. It records with gratitude the generous help of friends, scientific workers and interested townspeople—it looks FORWARD.

PROGRAMS OF MEETINGS, 1907-08

December, 1907 The Winter Birds—Mrs. Gates

January, 1908 The Visible Constellations—Miss Sturtevant

February Windsor County Game—John P. Webster

Collective paper: Hunting Tales—Mrs. Ward

March Preliminary Studies of Mosses—Miss Darling

Collective paper: Reviews of Scientific Books—Miss Smith

April Nature in Spring, Spring Birds—Miss Dunsmore

Spring Flowers—Miss Helen Sturtevant

Butterflies—Mr. Underwood

Discussion

May Rare Local Birds—Mrs. Underwood

Collective paper: Bird Biographies—Mrs. Spaulding

June Orchid Acquaintances—Mrs. Lucia H. Webster

Collective paper: Plant Studies—Miss Penniman

July A Few Insect Enemies—Mr. Underwood

Collective paper: Personal Reminiscences on Insects—Miss Nelson

August Notes, Questions and Discussions on these subjects:

Birds: Leader, Miss Evaline Darling

Plants: Leader, Miss Darling

Insects: Leader, Mr. Ruggies

September Hartland Soils and their Products, with exhibit—Mr. Ruggles

October Ferns of Hartland, with exhibit—Mr. Rugg

November Studies of Eastern and Western Birds—Miss Evaline Darling

December Yearly Bulletin

Editor in Chief, Miss Darling

Sub-editors:

Astronomy, Miss Sturtevant

Animals, Mr. Gates

Birds, Miss Evaline Darling

Insects, Mr. Underwood

Plants, Mr. Rugg

Minerals, Mr. Ruggles

Microscopy, Mrs. D. C. Webster

PROGRAM FOR 1923 — FIFTEENTH YEAR

January Reading from Fabre, Comstock and Emerton on Spiders. Reading from all available literature on Bluebird, and Thrush Family, to which it belongs.

February Study of Providence (R. I.) Park Museum Bulletin on Spiders. Winter collecting of Spiders. Study of Crowfoot Family of plants.

March Bird Banding, explained by H. G. Rugg. Common Spiders and How to Know Them—Miss Emeline Webster.

April Information Meeting. Plants: Crowfoot Family—Mr. Underwood. Bird Skins and Spiders—Mrs. Morgan. Moths and Butterflies—Miss Nelson.

May Bates Neighborhood. Voyage of discovery in all branches of Nature Study. Spiders' Homes, illustrated, Mrs. Underwood in charge.

June Meeting at "Paradise," Windsor. Walk for collections. Short talk on Spiders—Mrs. Morgan. Entertainment by Mother Nature Studies Auxiliary.

July A real supper at Damon Hall with Roll-call and Business Meeting. Lantern slides on Spiders by J. H. Emerton at 8 p. m.

August Meeting at "The Acre" in Woodstock. Exhibition: Each member contributing along the line of special work. Bird Music interpreted by the Violin—Miss Margaret Wilder, Whistled—Miss Florence Sturtevant. Lecture to be announced.

September—Walk to observe Jumping Spiders and to make collections. Talk on Mollusks, Club rooms—Mrs. Lucia H. Webster.

October Observation on Spiders by Junior Members. Exhibition of work done by whole Club on Spiders. Lecture to be announced.

November Resume of Year's Work on Crowfoot Family, the Bluebird and Thrush Family. Prize Essays awarded to Schools by Club read.

December All-day work meeting.

LIST OF MEMBERS

C - Charter

H - Honorary

Jr - Junior

Austin, Miss Laura (Jr)	Gates, Mr. Charles C. (C)
Baynes, Mr. Ernest Harold (H)	Gates, Mrs. Charles C. (C)
Billings, Miss Elizabeth	Gates, Miss Nellie M. (C)
Bruce, Miss Eulola M. (Jr)	Gill, Rev. C. O. (C)
Carr, Mr. Allen L.	Gill, Mrs. C. O. (C)
Cabot, Mr. Irving H.	Graham, Mr. Lee H. (C)
Chase, Miss Julia L. (C)	Hapgood, Miss Evie M.
Chase, Mrs. T. J.	Hoisington, Mr. Andrew C.
Chase, Mrs. Arthur	Hoisington, Mrs. Andrew C.
Clapp, Rev. O. D. (C)	Hurd, Mrs. A. T.
Cotton, Mr. A. D.	Ingalls, Mr. E. L. (C)
Cowles, Mr. Russell (C)	Ingalls, Mrs. E. L. (C)
Damon, Mrs. William E. (H)	Jenne, Mr. Nathaniel
Darling, Mr. Charles E. (H)	Jenne, Mrs. Nathaniel
Darling, Mrs. Charles E. (H)	Jenne, Miss Ruth
Darling, Miss Nancy (C)	Johnston, Miss Jennie E.
Darling, Mrs. Jason S.	Kavanaugh, Miss Flora H. (Jr)
Durphey, Mr. Frank A. (C)	Kavanaugh, Miss Nina (Jr)
Durphey, Mrs. Frank A. (C)	Kilner, Mrs. Samuel E.
Eaton, Mrs. Ellis F.	Kittredge, Miss Elsie M.
Emery, Mr. Howard (Jr)	Lamb, Miss Lizzie E. (H)
Emery, Mr. Wesley (Jr)	Lamb, Clara A. (C)
English, Mr. Ernest A.	Lansing, Mrs. Mary P. (H)
English, Mrs. Ernest A.	Lobdell, Miss Frances (C)
Echterbecker, Rev. C. F.	Lobdell, Miss Ruth (C)
Emerton, Mr. J. H. (H)	Mack, Mrs. W. E.
Fairbanks, Miss Lucy	Marble, Mr. Richard M.
Foster, Miss Leonora (Jr)	Martin, Miss Nina (C)
Fuller, Miss Evelyn F.	Merritt, Mrs. Lewis E. (C)
Fuller, Mr. George W.	McArthur, Mrs. Deane

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|---------------------------------|-----------------------------------|
| Merritt, Mr. Lewis E. (C) | Spear, Mrs. Frank G. |
| Merrill, Miss Marjorie (Jr) | Squires, Mrs. Florence E. |
| Miller, Mrs. James B. (C) | Starkweather, Mrs. Harriet P. (H) |
| Miles, Rev. H. A. | Sturtevant, Mrs. Wilbur R. |
| Morgan, Mr. A. B. (C) | Sturtevant, Miss Florence H. (C) |
| Morgan, Mrs. A. B. (C) | Sturtevant, Mrs. Nettie A. (C) |
| Morgan, Mrs. A. P. (H) | Swift, Dr. H. H. (H) |
| Moore, Mrs. W. H. | Symonds, Mrs. M. C. (H) |
| Morse, Prof. A. P. | Thomas, Mr. T. H. |
| Myers, Mrs. Mary H. | Tracy, Mrs. Ida |
| Nelson, Miss Laura (C) | Underwood, Mr. Jay G. (C) |
| Peck, Miss Eleanor (Jr) | Underwood, Mrs. Jay G. (C) |
| Pember, Mr. Karl A. | Walker, Mrs. Leslie I (C) |
| Pember, Mrs. Karl A. | Ward, Mrs. C. E. (C) |
| Penniman, Miss Dora T. (C) | Watkins, Miss Inez |
| Perkins, Miss Lucy E. | Watts, Miss Lydia (Jr) |
| Porter, Miss Lou E. | Webster, Mr. D. C. (C) |
| Reed, Mrs. Ida M. (C) | Webster, Mrs. D. C. (C) |
| Roger, Miss May E. | Webster, Miss Dora T. (Jr) |
| Rogers, Miss Maxine L. (Jr) | Webster, Miss Lucia H. (Jr) |
| Rogers, Mrs. Pearl E. | Webster, Miss Sarah (Jr) |
| Rugg, Mr. Harold G. (C) | Webster, Mr. John P. (C) |
| Ruggles, Mr. Byron P. (C) | Webster, Mrs. John P. (C) |
| Sheldon, Mr. Charles (H) | Webster, Miss Marion (C) |
| Slack, Mrs. Earle M. | Webster, Miss Emeline (C) |
| Smith, Miss Hattie M. (C) | Whiting, Dr. Phineas W. (C) |
| Spalding, Mrs. Carroll C. (C) | Whiting, Mrs. Phineas W. |
| Spalding, Mr. Daniel B. (C. Jr) | Williams, Dr. Edward H. jr. (H) |
| Spaulding, Mr. George L. | Wills, Mrs. Alice S. |

CONSTITUTION AND AMENDMENTS
(Abridged)

CONSTITUTION

Art. 1. This association shall be known as the Hartland Nature Club.

Art. 2. Its object is to promote friendly intercourse among students of nature in Hartland, and to secure a more thorough knowledge of the Natural History of Hartland.

Art. 3. Officers: President, Vice-President and Secretary-Treasurer, to be chosen annually.

Art. 4. Meetings: At the discretion of officers.

Art. 5. A student of nature may become a member of the association by signing this constitution.

A member who neither attends a regular meeting of this Club nor presents a paper for two consecutive years becomes liable thereby to forfeiture of membership and his name may be stricken from the roll of members at the discretion of the officers.

Art. 6. This constitution may be amended by a two-thirds vote at any regular meeting provided the amendment has been proposed at a previous meeting.

AMENDMENTS

A student of nature proposed for membership by an active member may be elected a member at any regular meeting.

Scientists and students may be elected Honorary Members if their names are proposed and seconded by members.

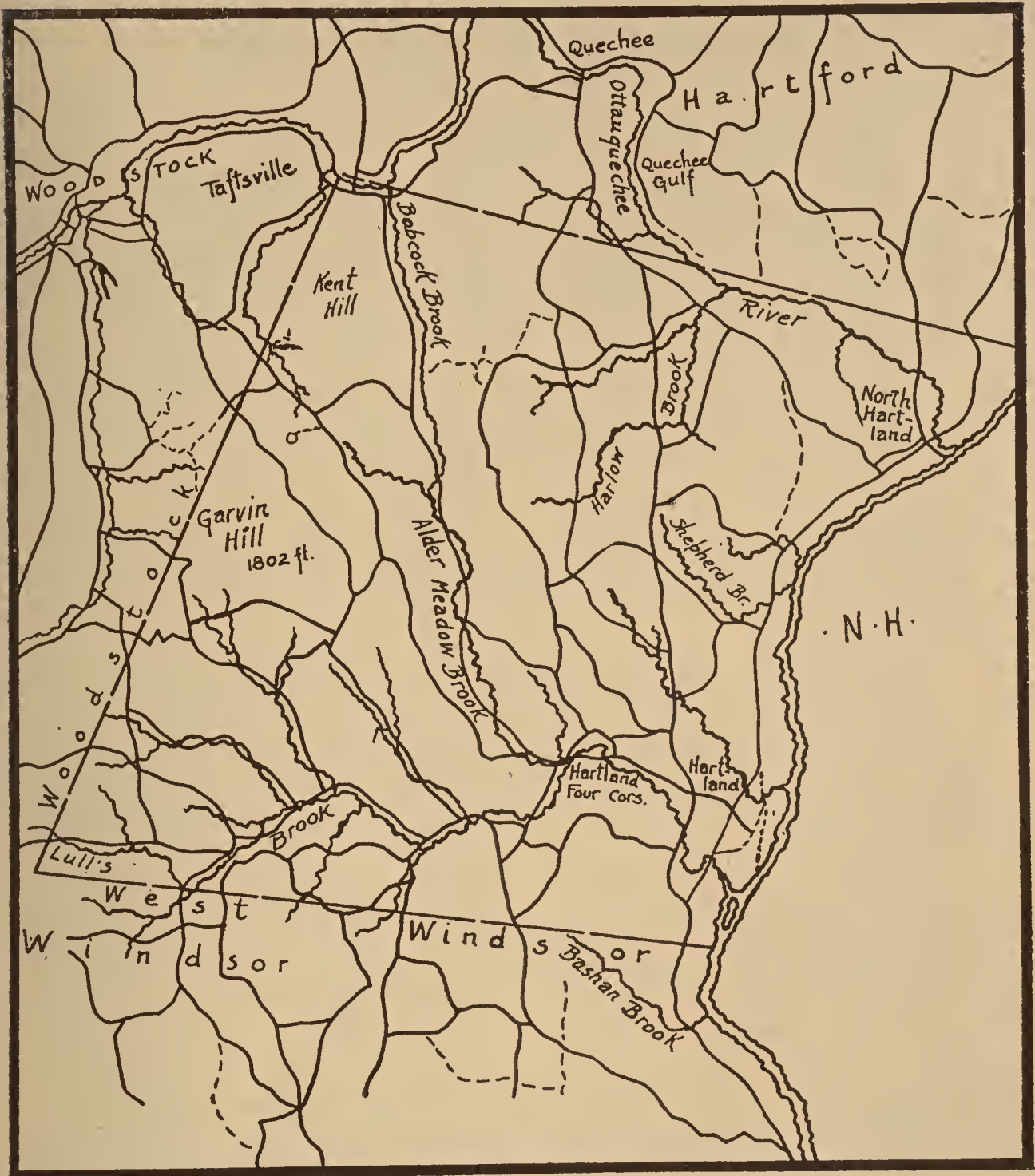
Membership shall be divided into the following classes: active, associate and honorary.

Active members shall write papers as requested by Executive Committee.

Associate members shall not be required to write papers, but shall be expected to attend meetings and report observations.

color or composition. Among the local rocks of Woodstock and vicinity there are no clastics. The freshly broken face of a piece of clastic feels like sand-paper of the grade shown by the size of the grains in the rock. Clastics will thus be foreigners, and will be found in the glacial deposits.

2. A light bricklayer's hammer with a square face is the best one for breaking off and dressing specimens. The long and chisel-like end is excellent for digging into loose deposits, as well as for cutting into soft and decomposed rocks to obtain unweathered specimens.
3. A good collection contains both weathered and fresh specimens of rocks, if possible to collect.
4. Rocks containing prominently crystallized minerals may require larger specimens to show the prevalence or scarceness of the enclosures.



HARTLAND VERMONT

SNAIL SWAMP 1911. Byron P. Ruggles
(Original Paper.)

Snail Swamp is at the southeast corner of my farm. There are about two acres of it on my land; an acre or more of it on the farm south of mine, and on that land there is a small stream running into the swamp part of the year. There are about two acres of the swamp on land east of mine, and the outlet is at that part of the swamp, from whence runs a small stream to Lulls Brook at the English Dam.

When the last Glacial Period was past, the coldest or middle part of which was thirty-one thousand years ago, and the water had settled away, making valleys for the rivers and streams and small brooks, there were left many small and some large ponds in depressions or low places that did not get drained because of the underlying rock or hard-pan of clay filled with stones, and Snail Swamp was one of these ponds underlain with hard-pan.

At first the water was filled with soil, pulverized rocks and stones and a sediment of blue clay settled at the bottom of the pond six or eight inches deep. Time went on and on; the water being limy from the limestone rocks so abundant, a carbonate of lime sediment, called marl, settled in the pond and in time nearly filled it.

Animal and vegetable life appeared. The water snail thrived where he found plenty of lime to make his shells of. Trees and shrubbery grew, and leaves fell in the pond and muck began to accumulate on top of the marl at a rate of probably an inch in depth in a hundred years. As time went on various water plants, mosses, sedges, grasses, shrubs and even trees, grew in shallow water, and as they eventually went to decay, muck was made faster than when it was all made of leaves. Finally the pond was filled and closed over with grasses, sedges, shrubs and trees as we find it today.

By running down a slim pole I found the muck a foot or two deep at or near the edge, but two rods from the edge the longest pole does not strike the bottom. Where I had removed four feet of muck a fourteen foot pole struck no bottom.

The old Windsor and Woodstock Turnpike crosses this swamp on my land close to my eastern line. The road was built about the year 1800. It was in use only twenty years when it

was given up. In building across the swamp, they first laid two lines of logs lengthways of the road and then covered those with logs crossways close together and then covered those logs with earth.

To aid in draining the swamp when digging muck there in 1862 we dug a ditch across this road, and three feet down in the muck under the logs we found a live toad. He was about half the size of a common toad, very soft and tender. We put him up on the muck we had thrown out and he winked a few thanks to us and hopped away.

When digging muck in this swamp later on in the seventies, I removed a large pine stump, and where I cut off a large root close to the body of the stump I counted 125 annular rings of yearly growth. Almost directly under this stump and ten inches lower down in the muck was a black ash stump a foot through and by counting the grains in portions of the partly decayed wood, I made its growth to be 150 years. Nearly under this stump and twenty inches lower down was the remains of a large black ash full two feet in diameter and probably of 300 years growth. Twenty inches still lower, and half its bigness in the marl, was a hemlock log of 75 years growth. Roots from the lower ash had run down through the hemlock log. Beside this log in the marl was a small hemlock stick cut at each end and trimmed and peeled by a beaver. It had lain there thousands of years when Babylon was founded. I showed you that stick. Now here was 650 years of tree growth. Allowing time for trees to go to decay and muck to form between them, it follows that muck began to form there 10 or 20 thousand years ago.

Down under the muck on top of the marl, is a great variety of the shells of the common water snails, some of them quite perfect and others in various stages of decay. Some scientists think the marl is made up wholly of decayed shells, but I cannot accept that idea. I have examined the marl lower down with a high power microscope and have found no trace of shells. These shells at the top of the marl are fossils, and probably grew before or about the time vegetation first appeared. The species are: *Planorbis bicarinatus*, *campanulatus*, *corpulentus*, *lentus*, *trivolvus*, *deflectus* and *parvus*; *Physa heterostropha*, *gyrina* and *Sayii*; *Limnaea palustris*, *elodes* and *humilis*; *Sphaerium sulcatum* and *striatum*; *Pisidium compressum* and *Ancylus paralelus*.

Conchology

In the line of Conchology, I have found at the swamp: *Helix albolabris*, *Helix alternata*, *Helix tridentata*, *Helix monodon* and *Succinea ovalis*, all more or less common land shells.

Ichthyology

I once put three specimens of *Ameiurus nebulosus* (Bullhead) in the pond that was formed where I dug muck, hoping they would thrive and multiply, but they all died.

Herpetology

I have found the *Amblystoma punctatum* (salamander) on the swamp and in the water, *Plethodon erythronotus* (salamander) and near by *Bufo lentiginosus* (toad) also *Hyla versicolor* (tree toad) and have heard *Hyla pickeringi* (peeper) so I know he is there; *Rana virescens* and *Rana clamata* (frogs) are often seen there and *Eutania sirtalis* (striped snake) very rarely. *Chrysemys picta* (painted turtle) is there in the pond and *Chelopus insculptus* (land turtle) I have seen on the driest part of the swamp.

Mammology

Fiber zibethicus (muskrat) has done some damage to my arrangements about digging muck. *Avicola Pennsylvanicus* (mouse) puts in an appearance. *Arctomys monax* (woodchuck) I have seen occasionally standing at the border of the swamp viewing the landscape o'er. *Tamias striatus* (red squirrel) and *Sciurus Hudsonicus* (chipmunk) both put in a happy-go-lucky time there. I have never seen *Condylura cristata* (star nosed mole) but I know he is there from his curious work no one else can do. I once saw *Mephitis mephitis* (skunk) walking about there but I did not have any trouble with him. I found a skeleton of *Vulpes vulpes* (fox) there, also a skeleton of *Vulpes domestica* (dog). The late Mr. Calvin Luce once told me his father had had cattle enough mired in that swamp that never got out but died there to stock the farm. That must have happened previous to seventy years ago.

Ornithology

Of the Ornithology of the swamp I will only say, I once found *Bonasa umbellus* (partridge) on a nest of eggs at the edge of the swamp and there is a tree near the middle of the swamp on which I have seen *Dryobates villosus* (hairy woodpecker) *Dryobates pubescens* (downy woodpecker) and *Melanerpes erythrocephalus* (red-headed woodpecker) do considerable work.

Entomology

I do not know that there are any species of Lepidoptera peculiar to Snail Swamp; but I may mention, I found cocoons with chrysalids that I hatched, of *Atticus polyphemus*, *cecropia* and *luna* on hazel bushes at the border of the swamp.

Diptera

There are Diptera always found about standing water, as in swamps, and *Mrs. Culex pipens* is always here in her season. She makes up the religious element of the locality, for she it is, that sings over us and preys upon us. Her sister *Culex conso-brinus*, is here also. Of course there are many other Dipters about here, but not that are peculiar to the place I know.

Neuroptera

Neuroptera are always found about standing water for their larva live in it. I have seen several species here but have identified but two. They are not the largest nor the smaller but about medium; they are *Libellula trimaculata* and *L. pulchella*.

Hemiptera

In Hemiptera we have the great powerful *Belostoma americana* that lives in water but sometimes flies about at night. He will run a sucker or something of the kind from his mouth into your flesh that gives a sensation just like the sting of a bee but as he does not leave any poison the sting does not last long. *Zaitha aurantiacum*, another water bug, is here, is half an inch long and half as wide with a flat back and I found one with a cluster of eggs on his back; were they of that species, or did some one else make a nest on him? *Ranatra quadridenticulata* is an odd fellow to be found in water, looks much like a Devil's darning needle. *Gerris conformis* goes skipping around on the water, and *Notonecta undulata* shoots about in the water, and always with his back down and his face and leg side up, but when out of the water goes hopping about with his back up and his legs under him in a rational manner. I have seen him there in ice water in the winter; his brother *Notonecta irrorata*, is there also but only seen rarely.

Coleoptera

Of the Coleopters I will mention only the true water beetles I have found in the water here. I begin with the largest and go down to the smallest. *Dytiscus fasciventris* is a large beetle an

inch and a half long with beautiful glossy wing covers; the female has fluted wing covers.

Hydrocharis obtusatus

Dinuetes Americanus

Acilius semisulcatus

Dinuetes discolor

The last two have a way of darting around in zigzag lines on top of the water.

Tropisturnis glaber

Laccophilus maculosus

Agabus congener

Berosus striatus

Coptotomus interrogatus

Cnemidotus 12 punctatus

Gyrinus confinis

Haliphus punctatus

Hydroporus undatus

Haliphus oribrarius

Hydroporus modestus

Coelambus inaequalis

Botany

Of the Flora of this swamp, I will first name the trees. There is a large *Tsuga Canadensis* (hemlock) standing in the edge of the swamp and leaning in. It is more than two feet through. I would have it cut for lumber, but it would fall where I could not get it. *Pinus strobus* (white pine) is represented by quite a number of trees; one twenty inches through was struck by lightning and twenty feet of the top taken off. *Abies nigra* (balsam) is here but not very large. There is a tall grand *Ulmus Americana* (elm) and many smaller specimens. *Betula lutea* (yellow birch) is here, also several medium large and beautiful *Betula papyrifera* (white birch), one on the turnpike near the middle of the swamp. The swamp is just home for *Fraxinus nigra* (ash). *Fraxinus Americana* is here at the edge. *Juglans cinerea* (butternut) commonly wants dry land, but here are several two or three rods in the swamp. *Acer sacharium* (maple), *Acer rubrum*, *Acer spicatum* and *Quercus rubra*, commonly dry land trees are all here, also *Tilia Americana* (basswood), the latter with its broad and beautiful leaves. *Amelanchier canadensis* (shadbush) shows its beautiful white blossoms here early in the spring. A good sized *Pyrus malus* (apple) grows within a rod of where we dug up the toad. *Prunus serotina* (black cherry) and *Prunus virginiana* (choke cherry) both grow here on the muck. *Alnus incana* (alder hoary) is an old standby in most every wet place is here, of course. *Sambucus canadensis* (elder sweet) and *Sambucus racemosa* (elder red) are both here, although the latter makes a very light showing. *Corylus rostrata* (hazelnut beaked) is here, and *Rosa rubiginosa* (sweet

briar), the latter being very rare. *Rubus strigosus* (backberry), *Rubus occidentalis* and *Rubus hispidus* all are here, and *Ribes floridum* (gooseberry), *Ribes Cynosbati* and *Ribes oxyacanthoides*. *Rhus Toxicodendron* (poison ivy) puts in its unwelcome appearance, and for vines we have *Vitis labrusca* (grape), *Ampelopsis quinquefolia* (woodbine) and *Solanum Dulcamara* (nightshade), the latter being very rare with its beautiful purple blossoms and own sister to our cultivated *Solanum tuberosum*. There are two species of *Cornus* here, one, *Cornus sericea*, is shy of the wet and grows at the edge, while *Cornus stolonifera* over-runs considerable space. There is *Salix* (willow) all about here and, I may not be correct, but as near as I can determine, there are three species, *Salix discolor*, *Salix rostrata* and *Salix cordata*. And then we have:

<i>Veratrum viride</i>	Poke
<i>Caltha palustris</i>	Cowslip
<i>Arisaema triphyllum</i>	Indian Turnip
<i>Aralia nudicaulis</i>	Sarsaparilla
<i>Impatiens pallida</i>	Jewelweed
<i>Impatiens fulva</i>	Jewelweed
<i>Actaea alba</i>	Baneberry
<i>Actaea rubra</i>	Baneberry
<i>Dentaria diphylla</i>	Indian Pepper
<i>Asarum Canadense</i>	Wild Ginger
<i>Chelone glabra</i>	Snakehead
<i>Mitella diphylla</i>	Miterwort
<i>Tiarella cordifolia</i>	False Miterwort
<i>Fragaria virginiana</i>	Strawberry
<i>Fragaria vesca</i>	Strawberry
<i>Ranunculus acris</i>	Buttercup
<i>Ranunculus abortivus</i>	Buttercup
<i>Taraxicum officinale</i>	Dandelion
<i>Rumex obtusifolius</i>	Yellow Dock
<i>Rumex Acetosella</i>	Sorrel
<i>Verbascum Thapsus</i>	Mullein
<i>Spirea tomentosa</i>	Hardhack
<i>Cnicus arvensis</i>	Thistle
<i>Cerastium vulgatum</i>	Chickweed
<i>Tussilago Farfara</i>	Colt's Foot
<i>Monarda punctata</i>	Horsemint
<i>Veronica serpyllifolia</i>	Speedwell

Geum rivale
Coptis trifolia
Lilium canadense
Lilium philadelphicum
Hypericum perforatum
Eupatorium perfoliatum
Viola canadensis
Caulophyllum thalictroides
Trillium erectum
Erythronium americanum
Maianthemum canadense
Oakesia sessilifolia
Spiranthes cernua
Lycopodium clavatum
Lycopodium complanatum
Equisetum hyemale
Equisetum arvense
Typha latifolia

Avensroot
 Goldthread
 Lily
 Lily
 St. John's-wort
 Thoroughwort
 Canada Violet
 Blue Cohush
 Benjamin
 Addertongue
 Canada Mayflower
 Bellwort
 Ladies Tresses
 Evergreen
 Evergreen
 Rush
 Rush
 Cattail

FERNS

Adiantum pedatum
Aspidium noveboracens
Aspidium spinulosum
Aspidium Thelypteris
Onoclea sensibilis
Onoclea Struthiopteris
Osmunda regalis
Osmunda Claytoniana
Osmunda cinnemomea
Pteris aquilina
Cystopteris bulbifera
Carex riparia
Carex rosea
Carex flava
Carenx pallescens
Juncus effusus

Maidenhair

Polypod

Carex grisea
Carex sparganioides
Carex vulpinoidea
Carex bromoides

GRASSES

Poa pratensis
Deyeuxia Canadensis
Trifolium repens

Glyceria nervata
Eatonia pennsylvanica

ADDED LIST—1914.

Acer Pennsylvanicum	Polygonum pennsylvanicum
Quercus ruba	Polygonum hydropiper
Salix fragilis	Spiranthes cernua
Rhus thyphina	Daucus carota
Cornus alternifolia	Crataegus coccinea
Vaccinium Oxycoccus	Lobelia inflata
Juniperus virginiana	Chrysanthemum leucanthemum
Ribes Cynosbati	Ranunculus scoleratus
Phleum pratense	Aster novae-angliae
Glyceria canadensis	Cnicus lanceolatus
Agrostis vulgaris	Cnicus odoratus
Leersia oryzoides	Cnicus muticum
Carex crinita	Anemone cylindrica
Scirpus atrovirens	Lactuca Canadensis
Scirpus lacustris	Antennaria plantaginifolia
Aspidium marginale	Gnaphalium polycephalum
Dicksonia pilosiuscula	Brunella vulgaris
Solidago nemoralis	Angelica atropurpurea
Solidago juncea	Achillea millifolium
Solidago canadensis	Thalictrum dioicum
Solidago lanceolata	Hepatica triloba
Solidago rugosa	Spirea salicifolia
Lycopodium dendroideum	Juncus effusus
Gaultheria procumbens	Viola pubescens
Aralia nudicaulis	Sanguinaria canadensis
Polygala paucifolia	Caltha palustris
Clematis virginiana	Aster vimineus
Rumex verticellatus	Aster laevis
Eupatorium purpurureum	Aster umbellatus
Eupatorium perfoliatum	Aster multiflorus
Habenaria tridentata	Cornus canadensis
Trientalis americana	Ambrosia artemisiifolia
Senecio aureus	

BIRDS OF HARTLAND, WOODSTOCK AND VICINITY

R—Resident S R—Summer Resident M—Migrant V—Visi-
tant W V—Winter Visitant S—Stray.

Grebes

Horned grebe S

Specimen in E. D. Morgan's Col. Feb. 1908

Pied-billed grebe M

Gulls, Terns, etc.

Herring gull M

Bonaparte's Gull S

Aug. 2, 1918 E. D. M's Col.

Common tern M

Ducks and Geese

American merganser M

Hooded merganser M

Nov. 16, 1920 R. M. Marble's Col.

Mallard duck S R

Black duck S R

Blue-winged teal M

Wood duck M

Whistler M

Canada goose M

Hérons and Bitterns

American bittern S R

Great blue heron S R

Little green heron S R

Black-crowned night heron S R

Rails and Coots

Virginia Rail S R

Sora rail S R

Yellow rail M

Oct. 20, 1913 E. D. M.'s Col.

Phalaropes

Red phalarope

Nov. 1916 W. H. Moore's Col.

Snipes and Sandpipers

American woodcock S R

Wilson's snipe S R
Pectoral sandpiper M
Greater yellow legs M
Lesser yellow legs M
Solitary sandpiper S R
Upland plover S R
Spotted sandpiper S R

Plovers

Killdeer M

Grouse

Ruffed grouse R

Pheasants

Ringed-neck pheasant R

Doves

Mourning dove S

Falcons, Hawks and Eagles

Marsh hawk S R
Sharp-shinned hawk S R
Cooper's hawk S R
American goshawk V
Red-tailed hawk S R
Red-shouldered hawk S R
Swainson's hawk S
May 23, 1915 E. D. M.'s Col.
Broad-winged hawk M
American rough-legged hawk M
Golden eagle S
1857 H. S. Dana's Col.
Bald eagle S
Duck hawk S R
Pigeon hawk M
American sparrow hawk S R
American osprey M

Owls

American long-eared owl R
Short-eared owl R
Barred owl R
Saw-whet W V
Screech owl R

Great horned owl R

Snowy owl W V

Cuckoo

Black-billed cuckoo S R

Woodpeckers

Hairy woodpecker R

Downy woodpecker R

Arctic three-toed woodpecker S

Nov. 16, 1910

Yellow-bellied sapsucker S R

Pileated woodpecker R

Red-headed woodpecker S R

Flicker S R

Goatsuckers, Swifts and Hummingbirds

Whip-poor-will S R

Nighthawk S R

Chimney swift S R

Ruby-throated hummingbird S R

Kingbird S R

Great crested flycatcher S R

Phoebe S R

Olive-sided flycatcher S R

Wood pewee S R

Yellow-bellied flycatcher M

Alder flycatcher S R

Chebec S R

Larks

Horned lark M

Prairie horned lark S R

Crows, Jays, etc.

Blue jay R

Northern raven S

Nov. 19, 1912 E. D. M.'s Col.

American crow R

Starlings

Starling R

Blackbirds, Orioles, etc.

Bobolink S R

Cowbird M

Red-winged blackbird S R

Meadow lark S R

Orchard oriole S

May 14, 1908

Baltimore oriole S R

Rusty blackbird M

Bronzed grackle S R

Finches, Sparrows, etc.

Evening grosbeak V

Pine grosbeak W V

Purple finch R

English sparrow R

Red crossbill V

White-winged crossbill V

Redpoll W V

American goldfinch S R

Pine siskin V

Snow bunting W V

Lapland longspur W V

Vesper sparrow S R

Savanna sparrow S R

White-crowned sparrow M

White-throated sparrow S R

Tree sparrow M

Chipping sparrow S R

Field sparrow S R

Junco S R

Song sparrow S R

Lincoln's sparrow M

Swamp sparrow S R

Fox sparrow M

Towhee S R

Rose-breasted grosbeak S R

Blue grosbeak S

Oct. 19, 1911

Indigo bunting S R

Tanagers

Scarlet tanager S R

Swallows

Purple martin S

Eave swallow S R

Barn swallow S R

Tree swallow S R

Bank swallow S R

Waxwings

Bohemian waxwing S

Oct. 30, 1917

Cedar waxwing S R

Shrikes

Northern shrike W V

Loggerhead shrike V

Vireos

Red-eyed vireo S R

Warbling vireo S R

Yellow-throated vireo S R

Solitary vireo S R

Wood warblers

Golden-winged warbler M

Nashville warbler S R

Tennessee warbler M

Parula warbler S R

Cape May warbler M

Yellow warbler S R

Black-throated blue warbler S R

Myrtle warbler S R

Magnolia warbler S R

Chestnut-sided warbler S R

Bay-breasted warbler S R

Blackpoll warbler M

Blackburnian warbler S R

Black-throated green warbler S R

Pine warbler S R

Yellow palm warbler M

Prairie warbler S

May 5, 1909

Oven bird S R

Water thrush M

Connecticut warbler S

Mourning warbler M

Adult female R. M. M.'s Col.

Northern Maryland yellow throat S R

Hooded warbler S

May 15, 1914

Wilson's warbler M

Canadian warbler M

American redstart S R

Pipits

American pipit M

Thrashers, Wrens, etc.

Catbird S R

Brown thrasher S R

House wren S R

Winter wren M

Creepers

Brown creeper R

Nuthatches and Tits

White-breasted nuthatch R

Red-breasted nuthatch W V

Tufted titmouse S

Apr. 6, 1910

Black-capped chickadee R

Acadian chickadee W V

Kinglets

Golden crowned kinglet M

Ruby crowned kinglet M

Thrushes, Bluebirds, etc.

Wood thrush S R

Veery S R

Gray-cheeked thrush M

Olive-backed thrush M

Hermit thrush S R

American robin S R

Bluebird S R

LIST OF MAMMALS RECENTLY OR LIKELY TO BE
FOUND IN WOODSTOCK OR HARTLAND,
VERMONT—1910

Mrs. Evaline Darling Morgan, A. P. Morse, G. M. Allen

- Northern Virginia Deer—*Odocoileus virginianus*
Northern Gray Squirrel—*Sciurus carolinensis leucotis*
Red Squirrel—*Sciurus hudsonicus*
Chipmunk—*Tamias striatus lysteri*
Woodchuck—*Arctomys monax*
Canadian Flying Squirrel—*Sciuropterus sabrinus macrotis*
Southern Flying Squirrel—*Sciuropterus volans*
House Mouse—*Mus musculus*
Norway Rat, Gray Rat—*Mus norvegicus*
Black Rat—*Mus rattus*
White-footed Mouse, Deer-mouse—*Peromyscus leucopus noveboracensis*
Red-backed Mouse—*Evotomys gapperi ochraceus*
Meadow-mouse—*Microtus pennsylvanicus*
Muskrat—*Fiber zibethicus*
Long-tailed Jumping Mouse—*Zapus hudsonius*
Woodland Jumping Mouse—*Napaeozapus insignis*
Porcupine—*Erethizon dorsatum*
Varying Hare—*Lepus americanus virginianus*
Northern Cottontail—*Lepus transitionalis*
Wildcat, Bay Lynx—*Lynx ruffus*
Red Fox—*Vulpes fulvus*
Gray Fox—*Urocyon cinereocaryontus borealis*
Otter—*Lutra canadensis*
Skunk—*Mephitis putida*
Mink—*Putorius vison*
Little Brown Weasel—*Putorius cicognanii*
New York Weasel, Large Brown Weasel—*Putorius noveboracensis*
Fisher—*Mustela pennanti*
Raccoon—*Procyon lotor*
Black bear—*Ursus americanus*
Long-tailed Shrew—*Sorex personatus*
Smoky Shrew—*Sorex fumeus*
Least Shrew—*Sorex hoyi*
Water Shrew—*Sorex albibarbis*

Short-tailed Shrew—*Blarina brevicauda talpoides*
Brewer's Mole—*Parascalops breweri*
Star-nosed Mole—*Condylura cristata*
Little Brown Bat—*Myotis lucifugus*
Say's Bat—*Myotis subulatus*
Silver-haired Bat—*Lasionycteris noctivagans*
Large Brown Bat—*Vespertilio fuscus* (now *Eptesicus*)
Red Bat—*Lasiurus borealis*
Hoary Bat—*Lasiurus cinereus*
Gray Fox—*Urocyon cinereoargenteus borealis*

Of extirpated species there may be added the Beaver, Cougar, Canada Lynx, Gray Wolf, Wolverine, and Pine Marten. Probably additional rodents (*Synaptomys* spp.) will be found by thorough search.

The terminology and sequence of species is based on Allen's List of N. E. Mammals, B. S. N. H., with one or two changes.

HISTORICAL NOTES

HARTLAND

Hartland was settled about 1763 by Timothy Lull on Britton's meadow, and like many other towns in the state saw its greatest prosperity from 1800 to 1825, when it was classed as second in wealth. The population was then 2,503, and in 1920 was 1,212. In 1880 when Dr. D. F. Rugg was Superintendent of Schools the population was 1,604; the number of common schools was 15, employing six male and 19 female teachers. The entire cost of schools in 1882 was \$2,530.20. In 1921 there were 10 schools employing ten female teachers. There were 181 pupils, and the entire cost of schools was \$12,811.40.

GREEN MOUNTAIN PERKINS ACADEMY

This Universalist school was incorporated by an act of the Vermont Legislature November 13, 1848, under the name of the Green Mountain Liberal Institute. In 1860 the word Liberal was dropped, and in 1870, the present name was adopted in honor of the late Gaius Perkins, an ardent supporter of the school.

Among the incorporators were the Hon. Silas H. Jennison, ex-Governor of Vermont; Ami Willard, Esq., and the following Universalist ministers: Warren Skinner, Eli Ballou, W. S. Ballou, D. M. Read and Samuel C. Loveland.

The school was supported by tuition receipts and private aid, until 1866, when through the efforts of Rev. E. S. Foster and Henry W. Walker, Esq., a permanent endowment of ten thousand dollars was obtained.

From the outset the school was successful. One hundred twelve students attended the first term, and during the next decade scholars came hither from all parts of the Union. The greatest number enrolled for a single year was 250, in the year ending November 15, 1853, during the principalship of Rev. J. S. Lee, who served from 1852 to 1857.

Among the distinguished men who have attended this school are the following: Elmer H. Capron, President of Tufts College;

Nehemiah White, President of Lombard University; Almon Gunnison, President of St. Lawrence University; Revs. S. A. Parker, Harvey Hersey, Simeon Goodenough, William E. Gibbs, Hiram A. Philbrook, Franklin S. Bliss and Benjamin K. Russ; Franklin M. Robinson of Dubuque, Augustus E. Scott of Boston, and ex-Congressman H. W. Parker of New Hampshire; Dr. Oorlando W. Sherwin, ex-President of Vermont Medical Society; Dr. Obed C. Turner, Cambridge, Mass.; Gen. Windsor B. French, Col. J. J. R. Randall, Edward Conant, Randolph Normal School; Prof. Isaac A. Parker, Lombard University and Samuel E. Adams, ex-Master of the National Grange.

Among the earlier principals who achieved marked success in their profession were John Ward of Detroit, Dewit C. Cram of Dubuque, Rev. John S. Lee, Dr. William R. Shipman, Rev. Moses Marston and Rev. J. J. Lewis. Later principals were men of marked ability, as E. H. Aldrich, N. P. Wood, M. D., I. S. Cook, O. H. Perry and C. H. Darling. Under the latter Miss Nancy Darling, one of the founders of the Nature Club, taught, this being in 1884-86.

Later, on account of other Universalist schools being established and the ever increasing educational facilities elsewhere, the school assumed a local character, and the last students to graduate in 1897 were only two in number, yet the school under Prof. Joseph H. Dunbar of North Hartland, a man of genius and author of several valuable text books, maintained its high standard of scholarship. In the intervening period between 1888 and 1897 Miss Carrie Walker (later Mrs. Ralph E. Jaquith) did excellent work, as did also seven other principals.

WILLIAM EMERSON DAMON

William Emerson Damon, author and naturalist, was born at Windsor, Vermont, November 15, 1838, son of Luther and Betsy (Thayer) Damon. His first American ancestor was John Damon, a native of Berkshire, England, and came to this country in 1631 and settled in Reading, Mass. The line descends through John Damon's son Joseph, his son Joseph, his son Jabez and his son Aaron Damon, grandfather of our subject. He was educated at the district school of Windsor and the Kimball Union Academy, Meriden, N. H. He remained in Windsor for several years,

obtaining a valuable training in commercial life, and at the same time developing his inherent genius for natural science. He conducted a mercantile business in Galena, Ill., for one year and in 1860 became associated with P. T. Barnum in New York. Barnum was at that time gathering scientific collections from all parts of the world for his museum and found in Mr. Damon a most ardent helper in this work. In 1862 Mr. Damon and Prof. Albert S. Bickmore, an assistant of Prof. Agassiz, of Harvard, conducted a scientific expedition to Bermuda, and succeeded in bringing back over 600 living specimens of tropical fish. On his return he became associated with Tiffany & Co., the New York jewelers, and for over forty years was part owner of the business and also superintendent of the credit department. But while thus engaged he did not give up his scientific activities. He was one of the founders and original directors of the New York aquarium, and his advice and assistance contributed in no small degree to its success and present popularity. Mr. Damon was the author of "Ocean Wonders" (1879) and in scientific circles he was a recognized authority in this specialty. He was a remarkable man who combined in the highest degree the qualities of commercial success and of rare scientific attainment. He was married at Windsor, Vermont, February 14, 1865, to Alma C. Otis, daughter of Timothy Bradford Otis. He was a member of the Mycological and the Naturalists Clubs of New York, the New York Scientific Alliance, the Microscopical, the Zoological, and the New England Societies of New York, and the Royal Microscopical Society of London. He died at Windsor, Vermont, December 1, 1911, and is survived by his widow.

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